

Appendix B

TEMP Checklist

B-1. TEMP 101 Brief

TEMA, in coordination with the TEMAC, provides additional guidance for the development and staffing of a TEMP on CD-ROM and the TEMA Web site at <http://www.hqda.army.mil/tema>. The TEMP 101 Brief is virtual in nature and as such provides links to previously approved (OSD/Army) portions of a TEMP that serve as examples and practical applications of the regulatory guidance.

B-2. TEMP Checklist

This checklist (fig B-1) is intended as a guide to both TEMP developers and TEMP reviewers. The checklist, when properly used, should ensure that all necessary and appropriate requirements in the approved T&E strategy are adequately considered and efficiently address T&E and program execution.

PROGRAM: Tactical Unmanned Aerial Vehicle

CURRENT TEMP MS: TUAU-333-TEMP-v3.2 DATE OF REVIEW: 10 Jan 02

REVIEWED BY: MAJ Joseph Prime, PM TUAU

Cover Sheet

Does the page identify the necessary program information, date, version of the TEMP, and category of the program?

Approval Page

- a. Does the page contain the necessary signatures for the acquisition category of the program?
- b. Is a date at the top of the page?
- c. Is there an update number if this is not an initial submission?
- d. Is there a revision number if this version contains changes based on comments subsequent to T&E WIPT concurrence from HQDA and/or OSD on reviews?

T&E WIPT Coordination Sheet

Are there signature blocks for—

- a. Program Manager?
- b. Combat Developer?
- c. System Evaluator (AST Chair)?
- d. Developmental Tester?
- e. Operational Tester?
- f. Logistician?
- g. Threat Integrator?
- h. Survivability/Lethality Analyst?
- i. E3/SM and/or JSC SME?
- j. HQDA Staff
 - (1) ASA(ALT)?
 - (2) DCS, G-1?
 - (3) DCS, G-2?
 - (4) DCS, G-3?
 - (5) DCS, G-8?
 - (6) ASA(ALT) ILS?
 - (7) DUSA(OR)?
 - (8) CIO/G-6?
- k. Others as required

Part I. System Introduction

- a. Mission Description.
 - (1) Mission of the deployed system briefly described?
 - (2) Does the mission description agree with the MNS, CRD (if applicable), C4ISP, and/or ORD?
 - (3) Is the need defined in terms of mission, objectives, and general capabilities?
 - (4) Is the MNS referenced and listed in appendix A - Bibliography?
 - (5) Does the mission describe the operational and logistical environment envisioned for the system?
- b. System Description.
 - (1) System design briefly described?
 - (2) Key features of both hardware and software and subsystems allow the system accomplishment of operational mission described?
 - (3) Interfaces/interoperability with existing or planned systems that are required for mission accomplishments described? Picture included?
 - (4) Are critical characteristics of the system or unique support concepts resulting in special test and evaluation requirements listed?
 - (5) System software, if used, described?

Figure B-1 (PAGE 1). TEMP checklist

-
- (6) Are existing and/or planned systems of other DOD Components or allies for which interoperability with this system is required listed?
 - (7) Is intra-Army interoperability certification addressed?
 - (8) Has the description of the overall system included Mission Critical Computer Resources (MCCR) for software utilized by the system?
 - (9) Have key processors, software (including firmware) configuration items, system interfaces, internal and external message standards, and protocols been identified?
 - (10) Does the system description address equipment that contains (or will contain) electronic or electrical components?
 - (11) Does the system description address frequency spectrum dependent equipment?
 - (12) What are the technical risks for the program's development?
 - (13) What is the program's risk management approach for hardware and software?
- c. System Threat Assessment.
- (1) Is the system threat briefly described?
 - (2) Is the operational threat environment summarized from the STAR?
 - (3) Is the threat at IOC plus 10 years and the reactive threat listed?
 - (4) Is the STAR referenced in Annex A - Bibliography?
- d. Measures of Effectiveness and Suitability.
- (1) Are the critical operational effective, suitability, and survivability parameters and constraints summarized from the ORD?
 - (2) Is the ORD referenced and listed in Annex A - Bibliography
 - (3) Are thresholds and objectives expressed as values?
- e. Critical Technical Parameters.
- (1) Critical technical parameters that have been/will be evaluated during all phases of development listed in the matrix? (Include software maturity and performance metrics and technical interoperability.)
 - (2) Accompanying technical threshold listed next to each technical parameter?
 - (3) Are results from developmental test addressing a given parameter posted?

Part II. Integrated Test Program Summary

- a. Integrated Test Program.
- (1) Does integrated test program address these areas of interest:
 - (a) Milestones?
 - (b) Acquisition events?
 - (c) Contract awards and events?
 - (d) Product deliveries, to include test article availability and the schedule of major software releases?
 - (e) Developmental test?
 - (f) Live fire test and evaluation?
 - (g) Operational test?
 - (h) E3/SM
 - (2) Does the funding data correspond to programmatic forecasts & contain all categories of funding as described in AR 37-100-FY:
 - (a) MRTFB Reimbursable identified?
 - (b) RDTE identified?
 - (c) Procurement identified?
- b. Management.
- (1) T&E responsibilities of all participating organizations outlined?
 - (2) Is the T&E WIPT charter referenced in Annex A - Bibliography?
 - (3) Is a clear definition of LRIP and full-rate production provided?
 - (4) Is the date of the decision to proceed beyond LRIP provided?
 - (5) Have participating organizations responsible for software T&E been identified?

Figure B-1 (PAGE 2). TEMP checklist—Continued

- (6) Are vulnerability and lethality Live Fire Test requirements and operational issues that cannot be addressed before proceeding beyond LRIP explanations provided?
- (7) Are responsibilities for configuration management of test articles designated?
- (8) Are responsibilities for establishing a HUC designated?
- (9) Is the HUC determination that further review is not required documented here, and that document listed in Annex A - bibliography?
- (10) Do the quantities required for DT and IOT&E correspond to those quantities designated in Part V?
- (11) Have the proposed or approved performance exit criteria to be assessed at the next acquisition milestone been included?
- (12) Are responsibilities for DITSCAP process and certification identified?
- (13) Are the procedures and responsibilities for OT certification identified?

Part III. Developmental Test and Evaluation Outline

a. Developmental Test and Evaluation Overview.

- (1) Explanation included of how planned DT will verify--
 - (a) Status of engineering design and development?
 - (b) Design risks have been minimized ?
 - (c) Achievement of technical performance?
- (2) Identify any technology or software that has not demonstrated its contribution to system performance in relationship to the system risk assessment.

b. Readiness for IOT

- (1) Are technologies identified which have not been demonstrated?
- (2) Is the degree to which the system has stabilized been addressed?
- (3) Has a discussion of the indicators that will be used to determine software status and evaluate progress toward software maturity in support of key decision points been identified?
- (4) Are early developmental tests scheduled which will mitigate the technical risks identified in the Integrated Program Summary, Annex D?
- (5) Is the Integrated Program Summary referenced in Annex A - Bibliography?
- (6) Are developmental tests, which feed into operational tests or evaluations, identified?
- (7) Is a Logistics Demonstration planned prior to the FRP IPR ?
- (8) Are tests that validate supportability requirements (that is, TMs and support packages) identified?
- (9) Is the test that will validate the program's requirements against the system specification identified?
- (10) Has survivability/lethality testing been highlighted?
- (11) Has applicable intra-Army interoperability certification been addressed?
- (12) Are developmental test events that will be used to evaluate E3 vulnerabilities identified?
- (13) Has DT performance exit criteria for OT been met?

c. Future Developmental Test and Evaluation.

- (1) Are developmental tests designated which will demonstrate test item safety; supportability (that is, verify and validate technical manuals and support packages) and that specifications are met?
- (2) Are survivability/lethality testing as well as those tests addressing conventional weapon effects, E3, ECM, ECCM, initial nuclear weapon effects, advanced technology survivability, and NBC contamination identified?
- (3) Are test plans and strategies to validate the manufacturing process identified?
- (4) Are the following areas addressed:
 - (a) RAM?
 - (b) Survivability?
 - (c) Electromagnetic Capability?
 - (d) Human Factors?
 - (e) System Safety?
 - (f) Health Hazard?
 - (g) Environment?
 - (h) Integrated Logistical Support?
- (5) Is each test or phase presented in the following format: Configuration Description; DT&E Objectives; DT&E Events, Scope, Basic Scenario, and Limitations?

Figure B-1 (PAGE 3). TEMP checklist—Continued

-
- (6) Are the differences between the system to be tested and objective system stated for each test (if necessary)?
 - (7) Are the resources required for each test identified in Part V?
 - (8) Are test and evaluation related exit criteria identified in the Acquisition Decision Memorandum (ADM) addressed?
 - (9) Are test limitations that significantly affect the evaluation discussed to include software developmental testing or those developmental tests, which will incorporate the system's embedded software?
 - (a) Configuration Management.
 - Have the differences between software functional capabilities of the system to be tested and those of the objective system been identified?
 - (b) DT&E Objectives.
 - Have software test objectives for this phase of testing been stated?
 - Has the method for software evaluation been discussed?
 - (c) DT&E Events, Scope of Testing, and Basic Scenarios.
 - Have the key planned software development events been identified?
 - Is there a discussion of the analysis, simulations, subsystem tests, and testbeds, which are to be used in determining if software DT&E objectives are met?
 - Is there a discussion on software test limitations that may significantly affect the evaluator's ability to draw conclusions and make recommendations concerning software technical parameters?

Part IV. Operational Test and Evaluation (OT&E) Outline

- a. OT&E Overview.
 - (1) Relationship between program schedule, system requirements, and operational issues, reflected?
 - (2) DT to be used as part of the evaluation identified?
 - (3) Simulations/models that will be used to supplement OT reflected?
 - (4) Has logistics support and human performance been addressed?
- b. Critical Operational Issues and Criteria.
 - (1) Approved critical operational issues listed?
 - (2) Reference made to approved COIC in Annex A?
 - (3) Have the measures of effectiveness and performance been stated?
 - (4) Have the evaluation criteria and data requirements for each measure been identified?
 - (5) Have OT entrance criteria been identified?
- c. Future Operational Test and Evaluation.
Evaluations/assessments listed as well as tests?
 - (1) Configuration Description
 - (a) Are differences described between tested system and the system to be fielded? For software?
 - (b) Is the extent of integration/interoperability with other systems reflected?
 - (c) Has the software and hardware configuration for each test been identified?
 - (d) Has the degree to which test results from this configuration represent performance of the deployed system been identified?
 - (2) OT Objectives
 - (a) Are test objectives including the critical operational issues to be addressed by each phase of OT and the MS(s) stated?
 - (b) If a Beyond LRIP decision is being supported are test objectives that examine all areas of operational effectiveness and suitability reflected?
 - (c) Has the relationship between OT objectives and software characteristics which affect critical operational issues been addressed?
 - (3) OT Events, Scope of Testing, and Scenarios
 - (a) Scenarios summarized?
 - (b) Events to be conducted identified?
 - (c) Type of resources to be used reflected?
 - (d) Simulation(s)/models to be employed identified?

Figure B-1 (PAGE 4). TEMP checklist—Continued

- (e) Type of representative personnel who will operate and maintain the system reflected?
- (f) Status of the logistic support reflected?
- (g) Operational and maintenance documentation that will be used identified?
- (h) Environment under which the system is to be employed and supported during testing reflected?
- (i) Planned sources of information reflected?
- (j) Has the relationship between software functions being tested and test scenarios been discussed?
- (k) Have load levels to be used, through simulation or other means, and their relationship to the required operational environment been identified?
- (l) Has system performance in an operational, electromagnetic environment (EME) been addressed?
- (4) Limitations
 - (a) Are test limitations discussed that may impact the resolution of affected critical operational issues?
 - (b) Are critical operational issues affected indicated in parentheses after each limitation?
 - (c) Have any factors which may inhibit realistic OT of the hardware/software been identified?
 - (d) Have constraints been identified along with their impact on critical operational issues, which impose on software maturity or availability of resources and simulators?
 - (e) Have waivers been submitted that identify E3/SM operational test limitations?
- d. Live Fire Test and Evaluation.
 - (1) Overall LFT&E strategy reflected?
 - (2) LFT&E issues identified?
 - (3) Required levels of system vulnerability/lethality reflected?
 - (4) Management of LFT&E program identified?
 - (5) LFT&E schedule reflected?
 - (6) Funding identified?
 - (7) Test plans identified?
 - (8) Requirements reflected?
 - (9) Related prior and future LFT&E efforts identified?
 - (10) LFT&E plan identified?
 - (11) Shot selection process reflected?
 - (12) Major test limitations identified?

Part V. Test and Evaluation Resource Summary

- a. Is a summary of all key T&E resources (government and contractor) provided?
- b. Are Major Range and Test Facility Base resources identified?
- c. Test Articles.
 - (1) Are actual number and timing requirements listed?
 - (2) Are key subsystems to be tested separately and their quantities identified?
 - (3) Are prototype, development pre-production, or production model use identified?
- d. Test Site and Instrumentation.
 - (1) Are specific test range/facility needs identified?
 - (2) Are planned test range/facility needs identified as compared with existing and programmed capabilities?
 - (3) Are new instrumentation acquisitions specified?
- e. Test Support Equipment.
 - (1) Is specifically acquired equipment identified?

Figure B-1 (PAGE 5). TEMP checklist—Continued

(2) Are unique/special calibration requirements indicated?

f. Threat Representation.

- (1) Type/number/availability identified?
- (2) Are requirements identified as compared with available and projected assets and their capabilities?
- (3) Major shortfalls identified?
- (4) Are M&S used as threat systems accredited?

g. Test Targets and Expendables.

- (1) Type/number/availability identified for each phase of testing?
- (2) Major shortfalls identified?
- (3) Threat targets for LFTE identified?
- (4) Threat munitions/systems for LFT identified?

h. Operational Force Test Support. Type and timing of aircraft flight hours, and so forth, identified for each phase?

i. Simulations, Models and Testbeds.

- (1) System simulations required identified for each phase?
- (2) Rationale for usage/application explained?
- (3) Accreditation Plan prepared?

j. Special Requirements.

- (1) Significant non-instrumentation capabilities and resources discussed?
- (2) E3/SM test specific resources addressed?

k. Test and Evaluation (T&E) Funding Requirements.

- (1) FY and appropriation line number reflected?
- (2) Funding required to pay direct costs identified?
- (3) Funding currently appearing in those lines indicated?
- (4) Major shortfalls identified?

l. Manpower/Personnel Training. Limitations that affect test execution identified?

Annex A - Bibliography

- Reports documenting developmental and operational T&E reflected?

Annex B - Acronyms

Annex C - Points of Contact

Attachment 1 - Requirements/Test Crosswalk Matrix

- Are COI, MOE, MOS, KPP, CTP, and each DT and OT event represented in the matrix?

Attachment 2 - Critical Operational Issues and Criteria

- Are the full set of Issue, Scope, Criteria, and Rationale listed?

Figure B-1 (PAGE 6). TEMP checklist—Continued
